

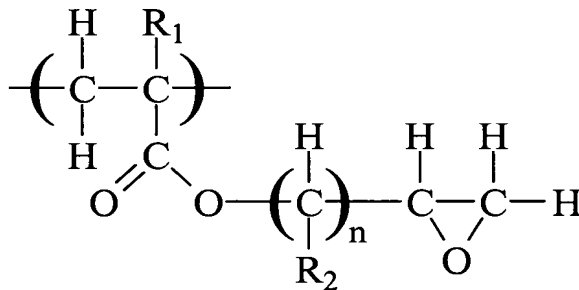
THE CLAIMS

We claim:

1. A golf ball having a coefficient of restitution of greater than about 0.7 and a compression of at least about 50, wherein the ball comprises a core and a cover having at least one layer disposed concentrically about the core,

wherein the layer is formed from a composition comprising a glycidyl polymer composition and a thermoplastic material selected from the group consisting of copolyesters, polyamide homopolymers or copolymers, polyetherester block copolymers, polyesterester block copolymers, polyetheramide block copolymers, polyesteramide block copolymers, polyurethanes, styrene-butadiene copolymers, dynamically vulcanized thermoplastic elastomers, polymers formed using a metallocene catalyst, and blends or copolymers thereof,

wherein the glycidyl polymer composition comprises a repeat unit structure consisting essentially of:



wherein R_1 is hydrogen, linear or branched alkyl group having the formula $\text{C}_x\text{H}_{2x+1}$, aromatic, or alicyclic, where x is an integer from 1 to about 8; R_2 is hydrogen, linear or branched alkyl group having the formula $\text{C}_y\text{H}_{2y+1}$, aromatic, or alicyclic, where y is an integer from 1 to about 20; and n is an integer ranging from 1 to about 6.

2. The golf ball of claim 1, wherein the cover is comprised of an outer layer and an inner layer and the composition forms the inner layer.

3. The golf ball of claim 2, wherein the inner layer has a first hardness and the outer layer has a second hardness greater than the first hardness.

4. The golf ball of claim 3, wherein the core has a third hardness within 10 Shore D of the first hardness and less than the second hardness.

5. The golf ball of claim 2, wherein the inner layer has a specific gravity greater than about 1.2.

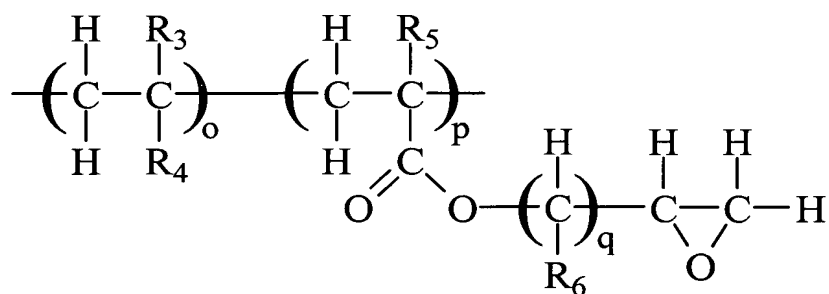
6. The golf ball of claim 2, wherein the inner layer has a flexural modulus of less than about 10,000 psi.

7. The golf ball of claim 1, wherein the thermoplastic material is selected from the group consisting of copolyesters, polyamide homopolymers or copolymers, polyetherester block copolymers, polyesterester block copolymers, polyetheramide block copolymers, polyesteramide block copolymers, polyurethanes, and blends or copolymers thereof.

8. A golf ball having a coefficient of restitution of greater than about 0.7 and a compression of at least about 50, wherein the ball comprises a core and a cover having at least one layer disposed concentrically about the core,

wherein the layer is formed from a composition comprising a glycidyl polymer composition and a thermoplastic material selected from the group consisting of copolyesters, polyamide homopolymers or copolymers, polyetherester block copolymers, polyesterester block copolymers, polyetheramide block copolymers, polyesteramide block copolymers, polyurethanes, styrene-butadiene copolymers, dynamically vulcanized thermoplastic elastomers, polymers formed using a metallocene catalyst, and blends or copolymers thereof,

wherein the glycidyl polymer composition comprises a structure consisting essentially of:



wherein R₃, R₄, and R₅ are each individually hydrogen, linear or branched alkyl group having the formula C_xH_{2x+1}, aromatic, or alicyclic, where x is an integer from 1 to about 8; each R₆ is individually hydrogen, a linear or branched alkyl group having the formula C_yH_{2y+1}, aromatic, or alicyclic, where y is an integer from 1 to about 20; o ranges from about 1 to about 99 weight percent of the total glycidyl polymer; p ranges from about 99 to about 1 weight percent of the total glycidyl polymer; and q is an integer ranging from 1 to about 6.

9. The golf ball of claim 8, wherein the cover is comprised of an outer layer and an inner layer and the composition forms the inner layer.

10. The golf ball of claim 9, wherein the inner layer has a first hardness and the outer layer has a second hardness greater than the first hardness.

11. The golf ball of claim 10, wherein the core has a third hardness within 10 Shore D of the first hardness and less than the second hardness.

12. The golf ball of claim 9, wherein the inner layer has a specific gravity greater than about 1.2.

13. The golf ball of claim 9, wherein the inner layer has a flexural modulus of less than about 10,000 psi.

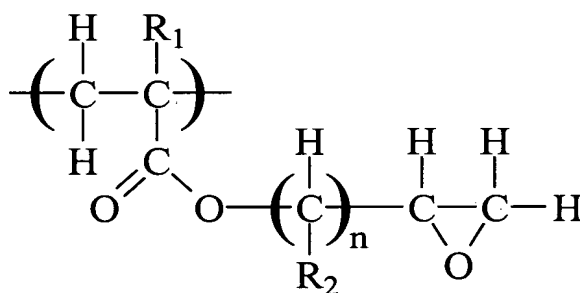
14. The golf ball of claim 8, wherein the thermoplastic material is selected from the group consisting of copolyesters, polyamide homopolymers or

copolymers, polyetherester block copolymers, polyesterester block copolymers,
polyetheramide block copolymers, polyesteramide block copolymers, polyurethanes, and
blends or copolymers thereof.

15. A golf ball having a coefficient of restitution of greater than about 0.7
and a compression of at least about 50, wherein the ball comprises a core and a cover
having at least one layer disposed concentrically about the core,

wherein the layer is formed from a composition comprising a glycidyl
polymer composition and a thermoplastic material selected from the group consisting of
copolyesters, polyamide homopolymers or copolymers, polyetherester block copolymers,
polyesterester block copolymers, polyetheramide block copolymers, polyesteramide block
copolymers, polyurethanes, styrene-butadiene copolymers, dynamically vulcanized
thermoplastic elastomers, polymers formed using a metallocene catalyst, and blends or
copolymers thereof,

wherein the glycidyl polymer composition comprises the following structure:



wherein R₁ is hydrogen, linear or branched alkyl group having the formula C_xH_{2x+1},
aromatic, or alicyclic, where x is an integer from 1 to about 8; R₂ is hydrogen, linear or
branched alkyl group having the formula C_yH_{2y+1}, aromatic, or alicyclic, where y is an
integer from 1 to about 20; and n is an integer ranging from 1 to about 6.

16. The golf ball of claim 15, wherein the cover is comprised of an outer
layer and an inner layer and the composition forms the inner layer.

17. The golf ball of claim 16, wherein the inner layer has a first hardness and the outer layer has a second hardness greater than the first hardness.

5 18. The golf ball of claim 17, wherein the core has a third hardness within 10 Shore D of the first hardness and less than the second hardness.

19. The golf ball of claim 16, wherein the inner layer has a specific gravity greater than about 1.2.

5 20. The golf ball of claim 15, wherein the thermoplastic material is selected from the group consisting of copolyesters, polyamide homopolymers or copolymers, polyetherester block copolymers, polyesterester block copolymers, polyetheramide block copolymers, polyesteramide block copolymers, polyurethanes, and blends or copolymers thereof.